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10/734,181	12/15/2003	Nathalie Mougin	05725.1303-00	2162
22852 7590 04/05/2011 FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER VENKAT, JYOTHSNA A	
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Application No. : 10/734,181  
Applicant : MOUGIN  
Filing Date : 12/15/2003  
Date Mailed : 04/05/2011

## NOTICE TO FILE CORRECTED APPLICATION PAPERS

### *Notice of Allowance Mailed*

This application has been accorded an Allowance Date and is being prepared for issuance. The application, however, is incomplete for the reasons below.

**Applicant is given 1 month(s) from the mail date of this Notice within which to respond.**

The informalities requiring correction are indicated in the attachment(s). If the informality pertains to the abstract, specification (including claims) or drawings, the informality must be corrected with an amendment in compliance with 37 CFR 1.121 (or, if the application is a reissue application, 37 CFR 1.173). Such an amendment may be filed after payment of the issue fee if limited to correction of informalities noted herein. See Waiver of 37 CFR 1.312 for Documents Required by the Office of Patent Publication, 1280 Off. Gaz. Patent Office 918 (March 23, 2004). In addition, if the informality is not corrected until after payment of the issue fee, for purposes of 35 U.S.C. 154(b)(1)(iv), "all outstanding requirements" will be considered to have been satisfied when the informality has been corrected. A failure to respond within the above-identified time period will result in the application being ABANDONED. **This period for reply is NOT extendable under 37 CFR 1.136(a).**

See attachment(s).

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Application No. 10/734,181 .

**SPECIFICATION REFERS TO ITS OWN PAGE/PARAGRAPH NUMBER(S) AND/OR  
SPECIFICATION REFERS TO NONEXISTENT CLAIM(S)**

- ☒ The patent will be printed in numbered columns with intercolumnar line numbers and without paragraph numbers. Any reference(s) within the applicant-filed specification to its own page number(s) or paragraph number(s) will have no meaning in the printed patent.

In response to this notice, the applicant either should file an amendment to the specification that removes the reference(s) to the page number(s) or paragraph number(s) or should submit a letter stating that the patent specification should be printed with the reference(s) to the page number(s) or paragraph number(s).

See Page(s)/Paragraph(s) Specification page 1, line 9; page 3, lines 4, 7 and 23 and page 4, line 4.

The response filed on March 11, 2011 does not resolve the problems noted above. The response of March 11, 2011 appears to be a duplicate of the correction filed on Sept. 23, 2010 which was filed in order to remove illustrations from the specification.

[001] This application claims benefit of U.S. Provisional Application No. 60/459,259, filed April 2, 2003.

[002] This disclosure relates to novel hair-cosmetic compositions comprising at least one film-forming gradient copolymer comprising at least two monomeric residues, such as amphiphilic gradient copolymers, that may, for example, be soluble or dispersible in water and/or in organic solvents, and wherein the at least one film-forming copolymer exhibits a mass polydispersity index ( $I_p$ ) less than or equal to 2.5, wherein the composition is able to form a film comprising at least one of the characteristics defined herein in paragraph [008].

[003] Styling compositions packaged in the form of an aerosol spray generally comprise a high proportion of alcohol. Following the recent sensitization of public opinion to environmental problems resulting from the emission of volatile organic products into the atmosphere, cosmetics with a high alcohol content are currently under scrutiny.

[004] One solution for reducing the amount of alcohol, or even eliminating alcohol from the formulations completely, is replacing it with an equivalent amount of water. However, adding large amounts of water to aerosol sprays intended for fixation of hair, such as lacquers, can lead to an undesirable distortion of the hair and to a degradation of the formulation's cosmetic properties. Moreover, most propellants of the hydrocarbon type are incompatible with water and for this reason it is generally not possible to use them in compositions with a high water content.

[005] Conventional radical polymers, i.e. those obtained by classic radical polymerization, can also be used to reduce or replace a formulation's alcohol content, in solution in ethanol, in water, or in a water/ethanol mixture.

35% to 95%.

[009] Another aspect of the present disclosure is an aerosol composition packaged in an aerosol device comprising a propellant and a haircare composition as defined in paragraph [008].

[010] Also, disclosed herein, is a method of treatment of hair, such as a method of styling, comprising the application of a haircare composition, as disclosed in paragraph [008], to the hair and/or spraying the hair with an aerosol composition, and if necessary, leaving the hair thus treated to dry.

[011] Gradient copolymers, as disclosed herein, can have a low dispersity in composition and the polymer chains comprising the gradient copolymers can have similar or the same structures. Therefore, such gradient copolymers are compatible with one another and, as a result, cosmetic compositions comprising these copolymers can exhibit less than all of the drawbacks and limitations of the compositions of the prior art.

[012] The at least one film-forming gradient copolymer, as disclosed herein, can, for example, be easily manipulated in water or in an organic solvent medium, while retaining its useful rheological properties.

[013] Furthermore, the at least one film-forming gradient copolymer can comprise a sufficient amount of hydrophilic monomeric residue, making it more readily soluble. Without being bound by theory, it is believed that solubility is promoted when all the polymer chains have the same composition.

[014] The at least one copolymer disclosed herein, can be chosen from film-forming gradient copolymers, which comprise at least two different monomeric residues, and which have a low mass polydispersity as defined in paragraph [008], and for instance, a low composition polydispersity.

[015] The mass polydispersity can be illustrated using the mass polydispersity index ( $I_p$ ) of the copolymer, which is equal to the ratio of the weight-average molecular weight ( $M_w$ ) to the number-average molecular weight ( $M_n$ ).

[016] A low mass dispersity as defined in paragraph [008] reflects approximately identical chain lengths, which is the case for the film-forming gradient copolymers as disclosed herein.

[017] According to the disclosure, the at least one film-forming gradient copolymer has a mass polydispersity index less than or equal to 2.5, for example, ranging from 1.1 to 2.3, for instance, ranging from 1.15 to 2.0, or further, for example, from 1.2 to 1.9.

[018] Furthermore, the weight-average molecular weight of the at least one film-forming gradient copolymer, can be ranging from 5,000 g/mol to 1,000,000 g/mol, for instance, ranging from 5,500 g/mol to 800,000 g/mol, and for further example, ranging from 6,000 g/mol to 500,000 g/mol.

[019] The number-average molecular weight of the at least one film-forming gradient copolymer can also range from 5,000 g/mol to 1,000,000 g/mol, for instance, ranging from 5,500 g/mol to 800,000 g/mol, and further for example, ranging from 6,000 g/mol to 500,000 g/mol.

[020] The weight-average ( $M_w$ ) and number-average ( $M_n$ ) molecular weights are determined by gel permeation liquid chromatography ("GPC") (wherein eluent THF, a calibration curve established with linear polystyrene standards, and a refractometric detector are used).

[021] The at least one film-forming gradient copolymer, according to the present disclosure, could, for example, have a low composition dispersity. For the purposes of this disclosure, low composition dispersity means that all the polymer chains of the at least one